Response under 37 C.F.R. 1.116
- Expedited Examining Procedure -
Examining Group 1752

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Lilia P. Burleva, et al

METHOD FOR CHEMICAL SENSITIZATION OF SILVER HALIDE FOR PHOTOTHERMOGRAPHIC USE

Serial No. 10/731,680

Filed 09 December 2003

Group Art Unit: 1752

Examiner: Chea, Thorl

I hereby certify that this correspondence is being deposited today with the United States Postal Service as first class mail in an envelope addressed to Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Sherryl A. Payne

September 19, 2005
Date

Commissioner for Patents
P.O. Box 1450
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Sir:

REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. 1.116

In response to the Office Action dated July 26, 2005, Applicants respectfully request reconsideration of the "final" rejection of the claims of the present application. The claims of this application have been rejected under 35 U.S.C. 103(a) for obviousness and under the judicially created doctrine of double patenting.

Rejections Under 35 U.S.C. §103

I. In paragraph 2 of the Office Action, Claims 1-4, 9-15, and 23-27 were rejected under 35 U.S.C. §103(a) as unpatentable over the combination of U.S. 5,891,615 (Winslow et al.), U.S. Patent 6,274,297 (Uytterhoeven et al.), and U.S. Patent 3,457,075 (Morgan et al.).

II. In paragraph 3 of the Office Action, Claims 6-8 were rejected under 35 U.S.C. §103(a) as unpatentable over Winslow et al.,

Uytterhoeven et al., and Morgan et al. and further in view of U.S. Patent 3,895,951 (Riester et al.).

III. In paragraph 4 of the Office Action, Claim 16 was rejected under 35 U.S.C. §103(a) as unpatentable over Winslow et al., Uytterhoeven et al., and Morgan et al. and further in view of U.S. Patent 6,440,649 (Simpson et al.).

IV. In paragraph 5 of the Office Action, Claims 17-22 were rejected as unpatentable under 35 U.S.C. §103(a) as unpatentable over Winslow et al., Uytterhoeven et al., Morgan et al., and Riester et al.

Each of these rejections is traversed and will be discussed in turn after a brief description of the presently claimed invention.

Rejection I:

The Office Action supports its rejection with Winslow et al. as the primary reference for its alleged teaching of a process "substantially as claimed" (Cols. 50-52 and Claims 1-19) that includes a step of chemically sensitizing silver halide grains by decomposing an organic sulfur-containing compound in an oxidizing environment, e.g. with pyridinium hydrobromide perbromide.

Morgan et al. is cited for its disclosure of forming *in-situ* silver bromide using a source of halide ion to react with silver ions of the organic silver salt that is said to enhance the image forming capacity of the composition (Col. 3, lines 65-67 and Col. 4, lines 1-22).

The Examiner has for the first time cited Uytterhoeven et al. for disclosing photothermographic materials incorporating a combination of silver halide made *ex-situ* with silver halide made *in-situ* in order to provide photothermographic materials with increased sensitivity and contrast (Col. 19-20, Table 4, and Col. 26-28, claims 1-28 [sic. 1-13].

The Office Action contends that the step of converting reducible silver ions into photosensitive silver halide grains is known from Morgan et al. and that the combination of *ex-situ* and *in-situ* silver halide halide to increase sensitivity of photothermographic materials is known from Uytterhoeven. Thus, it is argued that it would have been obvious at the time the invention was made to include the *in-situ* processing known of Morgan et al. in the process of Winslow et al. in combination with the *ex-situ* and *in-situ* silver halide of Uytterhoeven et al. to provide the process as claimed

Applicants' Invention:

Applicants' again point out that their claimed invention is directed to a unique method for preparing a photothermographic emulsion and material using a specified unique order of steps, and also using defined diphenylphosphine sulfide compounds in preferred embodiments. The method includes:

A) providing a photothermographic dispersion of preformed photosensitive silver halide grains and a non-photosensitive source of reducible silver ions,

B-1) providing an organic sulfur-containing compound, for example one or more of the defined diphenylphosphine sulfide compounds, in association with the preformed photosensitive silver halide grains and non-photosensitive source of reducible silver ions in the dispersion of step A),

B-2) converting some of the reducible silver ions into photosensitive silver halide grains (e.g. "*in-situ*" photosensitive silver halide grains), and then

C) chemically sensitizing at least the preformed photosensitive silver halide grains by decomposing the diphenylphosphine sulfide on or around the preformed and *in-situ* photosensitive silver halide grains in an oxidative environment to provide chemically sensitized preformed and *in-situ* photosensitive silver halide grains in association with the remaining non-photosensitive source of reducible silver ions.

Steps B-1 and B-2 can be performed in any order or simultaneously, but always before Step C.

Photothermographic materials are constantly being redesigned to meet ever-increasing performance, storage, and manufacturing demands raised by customers, regulators, and manufacturers. One of these demands is increased photospeed without a significant increase in fog (D_{min}) or a loss in D_{max}. Thus, while the current commercial method of chemical sensitization described in U.S. Patent 5,891,615 (Winslow et al.) has provided increased photospeed for photothermographic emulsions over previous methods, there is a continuing need for a further improved method that provides even greater photospeed for such emulsions.

Applicants have met that need. The present invention provides photothermographic emulsions and materials having increased photospeed

("speed") by using organic sulfur-containing compounds (including the preferred diphenylphosphine sulfides) in a different sequence of steps for chemical sensitization. The claimed method is different than that described in the art (e.g. that described in Winslow et al.).

Example 1 of the present application (pages 77-81) provides comparative data that is evidence of patentability over the teaching in the art (particularly Winslow et al.). Several photothermographic materials (Inventive Examples 1-2a, 1-2b, 1-3, and 1-4) were prepared, imaged, and evaluated according to the present invention using the procedures described in Example 1 and the sulfur-containing chemical sensitizer OSD-1 (a merocyanine dye). Control Example 1-1 was carried out using the procedure of Winslow et al. and the same chemical sensitizer.

The sensitometric results obtained from these photothermographic materials are shown in TABLE I (page 81). The photospeeds (measured at two places on the Density vs. log E curve, SP-2 and SP-3) were unexpectedly increased using the method of the present invention compared to the method of the prior art. In the case of SP-2, the increases were 3%, 11%, 10%, and 9%, and for SP-3, the increases were 12%, 10%, 8%, and 9%, over the Control Example 1-1 (Winslow et al. method). Thus, Applicants have demonstrated that the presently claimed method provides unexpected photospeed increase over the method of Winslow et al.

Further evidence of unexpected results are provided by Example 2 of the present application (pages 81-83) in which the method of the presently claimed invention was carried out using either chemical sensitizer OSD-1 merocyanine dye noted above (Inventive Example 2-2) or a preferred diphenylphosphine sulfide (Inventive Example 2-3). Control Example 2-1 was carried out using OSD-1 as the chemical sensitizer in the method of Winslow et al. The resulting sensitometric data are provided in TABLE II (page 83) in which it is evident that the method of the present invention provided increased SP-2 and SP-3 over the Control method with minimal change in D_{min}.

Rebuttal to Rejection:

Applicants respectfully submit that the rejection of Claims 1-4, 9-15, and 23-27 is in error because: (1) Winslow et al., Uytterhoeven et al, and

Morgan et al. are not properly combined; (2) even if the references are properly combined, no *prima facie* case for unpatentability has been made; and (3) even if the references are properly combined, Applicants have provided a showing of unexpected results over the combined teaching.

Winslow et al. and Morgan et al. are not properly combined because their teachings are contradictory.

Applicants agree that Winslow et al. teaches a useful method for chemical sensitization by decomposing sulfur-containing dyes onto preformed silver halide grains. *In-situ* silver halide grain formation is mentioned in Winslow et al. (Col. 13, lines 38-41). Winslow et al. also describes *in-situ* silver halide grain formation in the Examples by the addition of $CaBr_2$ and $ZnBr_2$ during preparation of the photothermographic emulsions. Throughout Winslow et al., there is no suggestion of the importance of timing in the overall process for preparing *in-situ* grains. Moreover, there is no mention, particularly in the Examples of preparing a dispersion of both preformed silver halide grains and *in-situ* silver halide grains before chemical sensitization. Thus, Winslow et al. is deficient in teaching Applicants' required decomposition of an organic sulfur-containing compound onto both preformed and *in-situ* photosensitive silver halide grains.

The Office Action attempts to supply the missing teaching with those of Uytterhoeven et al. and Morgan et al. This attempt fails for several reasons.

Applicants agree that Morgan et al. describes the formation of *in-situ* photosensitive silver halide grains to prepare photothermographic materials. However, Morgan et al. does not appear to suggest chemical sensitization for photothermographic emulsions at any time, whether before or after formation of *in-situ* photosensitive silver halide grains. Moreover, since Morgan et al. is limited to *in-situ* photosensitive silver halide grains, it fails to teach the use or chemical sensitization of a mixture of both preformed (*ex-situ*) and *in-situ* photosensitive silver halide grains. Rather, as noted in the Office Action, Morgan et al. actually teaches away from the use of preformed photosensitive silver halide grains (Col. 4, lines 7-22 and line 71 to Col. 5, line 4). Thus, it is inconceivable that a worker of ordinary skill in the art would combine the contradictory teachings of Winslow et al. and Morgan et al. Winslow et al.

strongly teaches the use of preformed photosensitive silver halide grains while Morgan et al. strongly teaches away from the use of preformed photosensitive silver halide grains. Which reference is to be followed? There is no guidance about this question from the cited art. Thus, the two references cannot be practiced together, and are not combinable for that reason.

Moreover, even if by some notion the two references are combinable, they fail to support a *prima facie* rejection because there is nothing in any of the references to hint of Applicants' unique sequence of steps for making photothermographic emulsions and materials. As pointed out above, Winslow et al. fails to teach or suggest: (1) use of a mixture of preformed and *in-situ* photosensitive silver halide grains along with (2) chemical sensitization after the *in-situ* photosensitive silver halide grains have been formed, and thus (3) chemical sensitization by decomposition of an organic sulfur-containing compound onto both types of photosensitive silver halide grains.

These serious and critical deficiencies are not overcome with the teaching in Morgan et al. This reference merely states a strong preference for using *in-situ* photosensitive silver halide grain. It does not suggest that the Winslow et al. method should be modified to use a mixture of the two types of photosensitive silver halide grains. Nor does it teach chemical sensitization of those two types of grains together. It fails to teach chemical sensitization of any grains. The Office Action has failed to point to any teaching concerning these points. Thus, there is no *prima facie* suggestion of Applicants' claimed invention.

Nor are these deficiencies overcome by combination with the teachings of Uytterhoeven et al. The Examiner cites Uytterhoeven et al. (for the first time in this prosecution) for the proposition that it teaches a mixture of *ex-situ* and *in-situ* silver halide grains in order to increase the sensitivity of photothermographic materials. This mixture is also taught in Winslow et al. where $CaBr_2$ and $ZnBr_2$ are added to generate *in-situ* silver halide after chemical sensitization. However Uytterhoeven et al. also neglects to teach chemical sensitization of either type of silver halide grains by any process. Thus, Uytterhoeven et al. adds nothing beyond that already described in Winslow et al.

Lastly, Applicants have provided a showing of unexpected results over the teaching in Winslow et al., Uytterhoeven et al., and Morgan et al. Applicants would ask the Examiner to again consider the discussion above

relating to the comparative results provided in Examples 1 and 2 of the present application. In both instances, Applicants' claimed method provided an unexpected increase in photospeed over the method of Winslow et al. Two organic sulfur-containing compounds were tested as chemical sensitizes including a merocyanine dye of Winslow et al. and a preferred diphenylphosphine sulfide. For these additional reasons, the presently claimed invention is patentable over the teaching in Winslow et al., Uytterhoeven et al, and Morgan et al. and the rejection should be withdrawn.

Rejection II:

Dependent Claims 6-8 have been rejected over Winslow et al., Uytterhoeven et al, Morgan et al. and Riester et al. The Office Action adds Riester for its teaching of the use of phosphine sulfides in photographic emulsions containing merocyanine spectral sensitizing dyes. The phosphine sulfides of Riester et al. are said to include the preferred diphenylphosphine sulfides used in the presently claimed invention. The Office Action argues that it would be obvious at the time the invention was made to use the phosphine sulfides taught in Riester et al. to stabilize the spectrally sensitized silver halide taught in Winslow et al.

Applicants respectfully submit that this rejection is improper for three reasons: (1) Winslow et al. and Riester et al. are not properly combined; (2) even if the references are properly combined, no *prima facie* case for unpatentability has been made; and (3) even if the references are properly combined, Applicants have provided a showing of unexpected results over the combined teaching of all four references.

Riester et al. has been improperly combined with the other three references because it is non-analogous art. Riester et al. is directed to photographic materials containing a silver halide, which materials are processed after exposure, using wet photographic processing solutions (e.g. Col. 17, lines 30-44). Nothing in Riester et al. hints of "dry-processed" photothermographic materials.

In order for a reference to be "analogous" prior art, the reference must be in the field of Applicants' endeavor or, if not, then be reasonably pertinent to the particular problem with which the Applicants are concerned, *In re*

Oetiker 24 U.S.P.Q.2d 1443, 1445 (Fed. Cir. 1992) and *In re Deminski* 230 U.S.P.Q. 313 (Fed. Cir. 1986). The Court has also said that a reference can be "analogous" art if "it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem", *Wang Laboratories Inv. v. Toshiba Corp.* 26 U.S.P.Q.2d 1767 (Fed. Cir. 1993).

The imaging arts have long recognized the differences between these two imaging systems and the unpredictability of using components in each one. It is well known from dozens of publications that one cannot predict the utility of photographic components in photothermographic materials because of the very different imaging chemistries, conditions, and retention or lack of retention of imaging chemistries in the imaged materials. The differences between photothermography and photography are outlined on pages 2-4 of the present application and several references cited therein. These differences have been recognized in the imaging arts for many years and have achieved separate classification in the USPTO as well as other patent searching systems.

The differences between photothermography and photography are outlined on pages 2-4 of the present application and several references cited therein. As noted on page 5 (lines 14-20), the effects of chemical sensitizers used in photographic emulsions and materials are not necessarily achievable in photothermographic emulsions and materials. The best that can be said for such chemical components is that they would be "obvious to try" in photothermographic materials, but without any reasonable expectation of success, merely trying the compounds in the photothermographic materials does not render such use unpatentable. Thus, without motivation in the art in general or in Riester et al. specifically, one skilled in photothermography would not consult the photographic teaching in Riester et al. to find "new" chemical sensitizers for use in the photothermographic emulsions of Winslow et al., Uytterhoeven et al., and Morgan et al.

It is therefore clear that Riester et al. fails the first test for "analogous" art—it is not in Applicants' field of endeavor. Riester et al. is photographic art, not photothermographic art.

It also fails the second test. It is <u>not</u> reasonably pertinent to the particular problem addressed by Applicants' claimed invention. Since Riester et

al. is directed to photographic emulsions, there is no discussion of the formation of *in-situ* photosensitive silver halide grains. Such grains are formed and used only in photothermographic emulsions since an organic silver salt must be present. The Office Action fails to address this critical difference and deficiency in Riester et al.

Thus, Riester et al. fails both tests required for it to be "analogous" art and is not properly combined with the other three cited references.

Without Riester et al., the three remaining references fail to support a *prima facie* rejection because there is nothing in those references to hint at the use of Applicants' diphenylphosphine sulfides for any purpose. Even the Office Action admits that Winslow et al., Uytterhoeven et al., and Morgan et al. fail to teach anything about the use of diphenylphosphine sulfides.

Even if the references are properly combined, Riester et al. is directed to the use of a wide variety of phosphine sulfides in photographic materials. However, Riester et al. does not teach the use of such compounds as chemical sensitizers. Rather, those compounds are used as "supersensitizers" for spectral sensitizing dyes. In other words, they are used to enhance the performance of known spectral sensitizing dyes, and more conventional compounds are then used as chemical sensitizers (see Col. 1, lines 37-48; and Col. 15, line 69 to Col. 16, line 26). The Examiner's attention is also directed to Example 1 of Riester et al. where the merocyanine is added to the emulsion as a spectral sensitizer (Col. 17, lines 3-5). The phosphine sulfide compound was added and found to increase sensitivity of the spectral sensitizing dye (Table I). Similar teaching is found in the remaining examples. However, there is nothing in the Examples to suggest decomposition of the sulfur-containing compound in order to achieve chemical sensitization using any type of compound let alone the phosphine sulfides. Indeed, since both the merocyanine spectral sensitizer dye and phosphine sulfide supersensitizer are sulfur-containing compounds, their decomposition would result in a non-photosensitive material.

Riester et al. also teaches that the phosphine sulfides can be added at any time in the preparation of a silver halide photographic emulsion (Col. 15, lines 16-24). There is no critical addition sequence for any type of emulsion let alone a photothermographic emulsion. This is in stark contrast to the present invention where sulfur-containing compounds must be added at a specific time

and in an oxidizing environment in order to decompose the sulfur-containing compound and to chemically sensitize both the preformed (*ex-situ*) and *in-situ* photosensitive silver halide grains. This is additional, incontrovertible evidence that Riester et al. is not teaching the use of these compounds as chemical sensitizers.

Moreover, even if one combined the teaching of Winslow et al. and Riester et al., a skilled worker would not be directed to the presently claimed invention. A skilled worker would certainly fail to appreciate chemical sensitization using any sulfur-containing compound (even the phosphine sulfides) after a mixture of two types of photosensitive silver halide grains had been formed. Morgan et al. does not help on this point because it strongly teaches away from the use of preformed photosensitive silver halide grains, and Uytterhoeven et al. adds nothing beyond that already taught in Winslow et al. Thus, a skilled worker in the art would have a difficult time following all of the cited references and somehow finding Applicants' claimed method. This could happen only if extensive experimentation was carried out, which is also another evidence of patentability of the claimed invention.

One skilled in the art following the combined teaching of Riester et al. and Winslow et al. would recognize that Riester et al. teaches the use of numerous conventional chemical sensitizers (Col. 15, line 69 to Col. 16, line 26). However, such chemical sensitizers are not useful in the method of Winslow et al. In fact, Winslow et al. teaches away from the use of these conventional compounds (Col. 9, lines 10-24). There is nothing in Riester et al. to suggest that the phosphine sulfides should be used as "chemical" sensitizers since they are used only to enhance the sensitivity of the "spectral" sensitizers.

Uytterhoeven et al. and Morgan et al. are not helpful to overcome this deficiency because they are silent about chemical sensitization for photothermographic emulsions. Uytterhoeven et al., for example, neglects to teach chemical sensitization of any kind for any type of silver halide grains and adds nothing beyond Winslow et al., the defects of which have already been described. Morgan et al., moreover, is limited to *in-situ* photosensitive silver halide grains and fails to describe how they can be chemically sensitized.

Thus, the combination of the four references fails to teach or suggest the presently claimed invention.

The Examiner argues that the transposition of process steps or the splitting of one step into two where the processes are substantially identical or equivalent in term of function, manner and result renders Applicants' invention *prima facie* obvious and does not patentably distinguish the process. *Ex parte Rubin* 128 USPQ 440, (PTO BdPatApp 1959). However, while a particular order of processing steps may seem obvious to the casual observer, any assumption of *prima facie* obviousness is rebutted with a showing of unexpected results, *In re Burhans* 154 F.2d 690, 69 USPQ 330 (CCPA 1946).

Applicants have provided those unexpected results. They have demonstrated that the use of diphenylphosphine sulfides in the method of the present invention provides unexpected results compared to the method of Winslow et al. and Riester et al. Applicants would point to the above discussion of the comparative results shown in Example 2 wherein the method of Winslow et al. was compared to the method of present invention. In particular, Inventive Example 2-3 provided a considerable increase in photospeed over Control Example 2-1 prepared according to Winslow et al.). For SP-2, the increase in photospeed was 26% and for SP-3, the increase was 38%. Applicants' method unexpectedly provided photothermographic materials with increased photospeed over the prior art method. These results are not suggested by anything in Winslow et al., Uytterhoeven et al., Riester et al., or Morgan et al. because the results are not predictable from their teaching, individually or in combination.

Further, the previously submitted **Rule 132 Declaration** provides additional evidence of unexpected results as it clearly shows from the data provided in copending U.S. Serial No. 10/731,251 that not just any phosphine sulfide would provide an increase in photospeed. Dr. Simpson has demonstrated that Applicants' choice in phosphine sulfide structure is critical to achieving the unexpected results. These unexpected results are not predictable from any teaching in the cited references, and in particular Riester et al., because Riester et al. broadly describes the useful "intensifying" compounds as having hundreds of possible aliphatic, cycloalkyl, aralkyl, aryl, or heterocyclic "R" substituents (Cols. 1-2). Riester et al. gives no preferences for the "R" substituents but lists 87 examples of compounds "particularly suitable for intensifying the sensitization effect of silver halide emulsion layers achieved with merocyanines" as spectral sensitizing dyes (Col. 3, line 15 to Col. 10, line 33). Compound 1 in Riester et al.

is triphenylphosphine sulfide that was tested in the comparative example of Example 8 cited in Dr. Simpson's Declaration. Compound 1 was used in Examples 1, 3, 4, 5, 6, 7, and 8 of Riester et al. A few other compounds were also tested, but Compound 1 is clearly the preferred phosphine sulfide in Riester et al. from its predominance in the examples. Thus, it has been demonstrated that the use of Applicants' specific diphenylphosphine sulfides is unexpectedly better in photothermographic materials over the closest compound in Riester et al.

For all of these reasons, the rejection of the claims over Winslow et al., Uytterhoeven et al., Morgan et al., and Riester et al. is in error and should be withdrawn.

Rejection III:

Dependent Claim 16 has been rejected over the combination of Winslow et al., Uytterhoeven et al., Morgan et al., and Simpson et al. This rejection is in error for the same reasons stated above in rebuttal of Rejections I and II. Nothing in Simpson et al. overcomes the deficiencies in the other three references. Simpson et al. is merely cited for its use of phosphors in photothermographic materials. While Applicants believe that Claim 16 is separately patentable over the combined four references, Applicants are not relying upon the recited phosphor for patentability of the generic invention. Rather, that dependent claim is also patentable because it is dependent upon patentable Claim 1. Thus, this rejection should be withdrawn.

Rejection IV:

Claims 17-22 have been rejected as unpatentable over the combination of Winslow et al., Uytterhoeven et al., Morgan et al., and Riester et al. These claims are directed to preferred embodiments of Applicants' invention whereby certain preferred diphenylphosphine sulfides are used for chemical sensitization of both preformed and *in-situ* photosensitive silver halide grains.

This rejection is also traversed for the same reasons stated above in rebuttal of Rejection II. The two references are improperly combined as noted above. Uytterhoeven et al. says nothing about the use of oxidative decomposition of sulfur compounds to chemically sensitize silver halide grains of photothermographic materials. Morgan et al. both disparages the use of preformed silver

halide gains and is also silent on the use of oxidative decomposition of sulfur compounds to chemically sensitize silver halide grains of photothermographic materials. Riester et al. is directed to the use of phosphine sulfides as supersensitizers rather than as chemical sensitizers in photography not in photothermography. Even if properly combined, the references fail to teach or suggest Applicants' critical sequence of steps in which chemical sensitization occurs after a mixture of both preformed and *in-situ* photosensitive silver halide grains is formed. Winslow et al. teaches chemical sensitization of preformed grains only. Its mention of *in-situ* silver halide grains (Col. 13, lines 38-41) is incidental to the claimed chemical sensitization method and fails to teach when *in-situ* grains should be prepared or even if they should be chemically sensitized. The teaching in the background (Col. 3, lines 15-45) and examples fails to suggest that both types of grains should be chemically sensitized together. In fact, Winslow et al. disfavors the exclusive use of *in-situ* grains (Col. 3, lines 40-45). Since Riester et al. is directed to photography, it is silent concerning *in-situ* photosensitive silver halide grains, or their mixture with preformed grains. Thus, the two references are seriously defective in relation to the invention of Claims 17-22, and the rejection should be withdrawn.

Double-Patenting Rejections

V. In paragraph 7 of the Office Action, Claims 1-27 were rejected as being unpatentable under the judicially created doctrine of obviousness-type double patenting over Claims 1-19 of Winslow et al. taken with Morgan et al. and Riester et al.

VI. In paragraph 8 of the Office Action, Claims 1-27 were been provisionally rejected as being unpatentable over Claims 1-27 of pending and commonly assigned U.S. Serial No. 10/731,462 (Burleva et al.) having a common filing date with the present application.

Both of these rejections are traversed for reasons presented below. Each one is considered in turn.

Rejection V:

Applicants maintain their position that the double patenting rejection over the claims of Winslow et al. taken with Morgan et al. and Riester et

al. is faulty for the same reasons stated in rebuttal of Rejections I and II. Reister et al. and Morgan et al. are not properly combined with the claims of Winslow et al. any more than its text for the reasons stated above. Moreover, even if combined, the teaching of the claims with Morgan et al. and Riester et al. fails to provide a case for *prima facie* obviousness. As pointed out above, Applicants have also provided a showing of unexpected results that is evidence of patentability. Thus, the double patenting rejection over the claims of the 6-year old Winslow et al. with the two even older patents is clearly unreasonable and without merit. No Terminal Disclaimer will be submitted for a 6-year old patent and the USPTO should reexamine its current burdensome practice regarding "double patenting" rejections in such instances.

Rejection VI:

Applicants maintain their position that the provisional double patenting rejection of Claims 1-27 over the claims of copending U.S. Serial No. 10/731,462 is also traversed on the merits and Applicants are not offering a Terminal Disclaimer because the rejection is flawed. The Office Action supports its rejection with the statement that "[a] lthough the conflicting claims are not identical, they are not patentably distinct from each other because the claims contain *similar steps* and the same sulfur containing compound". Applicants disagree with this statement.

The claimed invention in the copending application is also a method for preparing photothermographic emulsions and materials. That much is in common with the presently claimed invention. With respect to the sulfur-containing compounds, the compounds used in the copending application are only some of the sulfur-containing compounds useful in the presently claimed invention. In particular, those diphenylphosphine sulfides are the preferred compounds of the presently claimed invention.

More importantly, however, the claims of the present application require a unique and critical sequence of steps that, while allegedly "similar" to the sequence of step of the copending application as suggested by the Office Action, are patentably distinct. Nothing in the copending claims suggests that a mixture of both preformed and *in-situ* photosensitive silver halide grains is to be prepared, or that such mixture is to be prepared before chemical sensitization

using organic sulfur-containing compounds. Thus, Applicants' claimed invention provides chemical sensitization of both types of compounds. This is not suggested by the claims of the copending application in any manner. Thus, the provisional double patenting rejection is in error and should be withdrawn.

Response to Examiner's Arguments in Paragraph 9

The comments in the Office Action in paragraph 9 are a recapitulation of the Examiner's previous arguments and Applicants' foregoing comments in rebuttal remain cogent. The Examiner fails to recognize that Reister et al. is non-analogous art and would appear to consider any publication in imaging science to be pertinent. The argument that silver halide emulsions are used in both photographic and photothermographic materials and thus a basis for this rejection in the Office Action is clearly indicative of a lack of scientific understanding of the different imaging chemistries, purposes, problems, expectations, and predictability, and the decades of different research needed to bring each type of imaging material to commercial success. Applicants have already pointed out above why Riester et al. is non-analogous art and particularly why it fails the "second" test stated by the Courts. The problems are different, pure and simple.

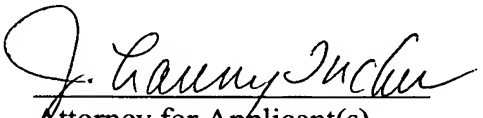
Moreover, one cannot use the teaching in Winslow et al. to "cure" the lack of teaching in Riester et al. about a different problem as the Examiner attempts to do on page 10 of the Office Action. The problem addressed in Riester et al. is the same problem addressed in Winslow et al. The Courts have not said that non-analogous art can be made analogous art by looking at some other reference outside its field of endeavor. Thus, the Office Action uses circular reasoning to try to prove its point. Merely repeating unsupported opinions that a reference is "analogous" art and that the claimed invention is obvious several times during the course of this prosecution doesn't make it so.

Applicants have already pointed out also why the Rule 132 Declaration of Dr. Simpson is pertinent to Applicants' arguments. It is irrelevant that the invention in USSN 10/731,251 is directed to a "material" instead of a process. The Declaration demonstrated both a material and a process of making it, which process is so similar to the presently claimed invention as to render the comparative data pertinent and demonstrative of unexpected results.

As stated above, the Examiner should appreciate that the GOLD compounds tested in the Declaration were used at the same concentration so their effects were cancelled. The only effects measured in the comparative examples shown in the Declaration were those demonstrating the ineffectiveness of triphenylphosphine sulfides vs. the effectiveness of diphenylphosphine sulfides in the sensitizing method. This comparison has scientific credibility, as any person skilled in the chemical arts, such as Dr. Sharon Simpson, would readily appreciate.

Since all of the issues raised in the "final" Office Action have been appropriately addressed with the foregoing amendments and remarks, reconsideration of this patent application is respectfully requested. A prompt and favorable action by the examiner to grant allowance is earnestly solicited in order to avoid an appeal.

Respectfully submitted,



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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.